

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

PTO/PCT Rec'd 21 SEP 2001

Applicant's or agent's file reference P57827W	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/GB 00/ 01086	International filing date (day/month/year) 22/03/2000	(Earliest) Priority Date (day/month/year) 22/03/1999
Applicant CHARTERHOUSE THERAPEUTICS LTD. et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 8 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☒ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of Invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☐ None of the figures.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Present claims 1-10,12-36 relate to an extremely large number of possible compounds/products. Additionally, present claims 1-36, do not meet the requirements of Rule 6.2 (a) PCT.

The definition "R1, R2, R3, R4, R5, R6 are (independently) hydrogen or any other moiety and X is any moiety" in claim 1, and the definition "X is an Si-containing group" of claim 3 are non-limiting; furthermore, the definition of R1 - R4 in claim 2 relates to an extremely large number of possible compounds/products; in fact, the claims contain so many options and variables, that a lack of clarity (and/or conciseness) within the meaning of Article 6 PCT arises to such an extent, as to render a meaningful search over the whole of the claimed scope impossible; support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is to be found, for only a very small proportion of the compounds/products claimed.

Also Claim 13 and 31, claiming "compound having a formula as shown in figure 10" is obscure, because no definition is given for the substituents in the mentioned formula.

Claim 36 is also obscure, not defining any technical feature.

Moreover, the definition in claim 1: "...wherein the compound has higher activity than cyclopent-2-en-1-one in respect of one or more of the following:.....", relates to a compound defined by reference to a desirable characteristic or property. The claim covers all products/compounds having this characteristic or property, whereas, as already mentioned above, the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such products/compounds. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the product/compound by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible.

The claimed therapeutic applications "activating HSF", "inhibiting NF-kB", "inhibiting the replication of HSV-1" and "inhibiting the replication of Sendai Virus" in claim 1, "disorder affecting aquatic organism" in claim 24, "plant disorders" in claim 28 etc. etc. are not specified therapeutic applications.

Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the products/compounds and in relation to the medical conditions for which pharmacological data were provided in the description, in relation to the treatment of inflammation, viral infections and of ischemia, with due regard to the general idea underlying the application.

Claims searched incompletely: 1-36

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 00/01086

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K31/695 A61K31/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K C07D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, CHEM ABS Data, EMBASE, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	WO 99 29647 A (ENOKI TATSUJI ;KOYAMA NOBUTO (JP); IKAI KATSUSHIGE (JP); KATO IKUN) 17 June 1999 (1999-06-17) * See Compound RN= 227026-24-6 * page 58 ---	1,2, 8-10, 21-23, 26,28, 30-36
X	WO 99 00349 A (INAMI KAORU ;KOYAMA NOBUTO (JP); KATO IKUNOSHIN (JP); KOBAYASHI EI) 7 January 1999 (1999-01-07) * See compounds with RN=219314-65-5; 219314-66-6; 219314-67-7; 219314-68-8; 219314-69-9; 219314-70-2 * & Database STN; file CAPLUS, AN= 1999:34881 --- -/--	1,2,4, 6-10, 17-24, 26,28, 30-36

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

19 July 2000

Date of mailing of the international search report

27/07/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Veronese, A

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 00/01086

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WO 98 40346 A (KOYAMA NOBUTO ; IKAI KATSUSHIGE (JP); KATO IKUNOSHIN (JP); KOBAYASH) 17 September 1998 (1998-09-17)</p> <p>* See compounds RN= 132625-75-3 204514-85-2 204514-86-3 204514-87-4 212774-13-5 212774-14-6 212774-15-7 212774-16-8 212774-17-9 212774-18-0 212774-19-1 12774-20-4 212774-21-5 212774-23-7 212774-24-8 212774-25-9 212774-26-0 *212774-27-1 & Database STN; fil CAPLUS AN= 1998:621183 ---</p>	<p>1,2,6-9, 15, 21-23, 26,28, 30-36</p>
X	<p>EP 0 180 399 A (TEIJIN LTD) 7 May 1986 (1986-05-07)</p> <p>* See compounds RN= 56745-67-6; 102355-01-1; 104248-60-4 * ---</p>	<p>1-7,10, 21-23, 25,26, 28,30, 32-36</p>
X	<p>WO 98 39291 A (TOMINAGA TAKANARI ; ENOKI TATSUJI (JP); HAGIYA MICHIO (JP); KOYAMA) 11 September 1998 (1998-09-11)</p> <p>the whole document ---</p>	<p>1,2,7,9, 10,14, 23, 26-30, 32-36</p>
X	<p>JP 07 233142 A (TEIJIN LTD) 5 September 1995 (1995-09-05)</p> <p>& Database STN, file CAPLUS; AN= 1995:929656 * See compound RN= 172681-53-7 * ---</p>	<p>1,3,4,6, 21-23, 26,28, 30-36</p>
X	<p>US 5 216 183 A (HAZATO ATSUO ET AL) 1 June 1993 (1993-06-01)</p> <p>* See compounds in tables 1-3,6,7,9,10,11,13-18,24 * examples ---</p>	<p>1-8, 21-23, 26,28, 30-36</p>
X	<p>JP 62 000044 A (NIPPON IYAKUHHIN KOGYO KK) 6 January 1987 (1987-01-06) & Database STN, fil CAPLUS AN= 1987:175830 * See compound RN= 107837-05-8 * ---</p>	<p>1</p>

-/--

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 00/01086

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	ROSSI A ET AL: "2-CYCLOPENTEN-1-ONE, A NEW INDUCER OF HEAT SHOCK PROTEIN 70 WITH ANTIVIRAL ACTIVITY" JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 271, no. 50, 13 December 1996 (1996-12-13), pages 32192-32196, XP002069381 ISSN: 0021-9258 cited in the application the whole document ---	14,27,30
A	WO 97 48389 A (SANTORO MARIA GABRIELLA ;AMICI CARLA (IT); ELIA GIULIANO (IT); GAR) 24 December 1997 (1997-12-24) the whole document ---	1,14,27, 30
A	WO 98 25593 A (SANTORO MARIA GABRIELLA ;ELIA GIULIANO (IT); ROSSI ANTONIO (IT); C) 18 June 1998 (1998-06-18) the whole document ---	1-36
A	EP 0 701 988 A (BAYER AG) 20 March 1996 (1996-03-20) the whole document ---	1
A	MYERS, ANDREW G. ET AL: "An improved preparation of highly enantiomerically enriched (R)-(+)-4-tert-butyl dimethylsiloxy-2-cyclo penten-1-one" TETRAHEDRON LETT. (1996), 37(18), 3083-3086, XP002111661 * See compound RN= 61305-35-9 *	11,12
A	JP 09 169780 A (FUJI YAKUHI KOGYO KK) 30 June 1997 (1997-06-30) * See compound N.3 at page 3 *	1
A	EP 0 106 576 A (TEIJIN LTD) 25 April 1984 (1984-04-25) * See compound RN= 56745-67-6 *	11,12
P,X	EP 0 978 277 A (TAKARA SHUZO CO) 9 February 2000 (2000-02-09) the whole document ---	1,2,7,9, 10,17, 18,26, 28,30, 32-36
P,X	EP 0 978 278 A (TAKARA SHUZO CO) 9 February 2000 (2000-02-09) the whole document ---	1,2,7,9, 10,24; 26,30-36
	---	-/--

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 00/01086

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	EP 1 008 345 A (TAKARA SHUZO CO) 14 June 2000 (2000-06-14) the whole document ---	1,2,7,9, 10,26, 30-36
X	WO 99 04777 A (KOYAMA NOBUTO ;KATO IKUNOSHIN (JP); KOBAYASHI EIJI (JP); TAKARA SH) 4 February 1999 (1999-02-04) the whole document -----	1,2,7,9, 10, 21-23, 26,28, 30-36

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 00/01086

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9929647	A	17-06-1999	NONE	
WO 9900349	A	07-01-1999	AU 7551698 A EP 1000923 A	19-01-1999 17-05-2000
WO 9840346	A	17-09-1998	AU 6117798 A CN 1247528 T EP 0976717 A	29-09-1998 15-03-2000 02-02-2000
EP 0180399	A	07-05-1986	JP 1735529 C JP 4019214 B JP 61189245 A JP 1907707 C JP 6035422 B JP 61291538 A JP 1596358 C JP 2020616 B JP 61100542 A JP 61100538 A DE 3586085 A US 4711895 A	17-02-1993 30-03-1992 22-08-1986 24-02-1995 11-05-1994 22-12-1986 27-12-1990 10-05-1990 19-05-1986 19-05-1986 25-06-1992 08-12-1987
WO 9839291	A	11-09-1998	AU 6117598 A CN 1248243 T EP 0984001 A AU 6117698 A CN 1248164 T EP 0974347 A WO 9841196 A AU 6418698 A CN 1251522 T EP 0978277 A WO 9843623 A AU 6418898 A CN 1249680 T EP 0978278 A WO 9843624 A	22-09-1998 22-03-2000 08-03-2000 12-10-1998 22-03-2000 26-01-2000 24-09-1998 22-10-1998 26-04-2000 09-02-2000 08-10-1998 22-10-1998 05-04-2000 09-02-2000 08-10-1998
JP 07233142	A	05-09-1995	NONE	
US 5216183	A	01-06-1993	AU 615534 B AU 3315089 A CA 1332603 A CA 1335669 A CA 1335599 A DE 68905219 D DE 68905219 T EP 0338796 A JP 2275849 A JP 2503073 B US 5116869 A AU 636675 B AU 6532090 A CA 2044179 A DE 69026706 D DE 69026706 T EP 0448726 A WO 9105766 A	03-10-1991 26-10-1989 18-10-1994 23-05-1995 16-05-1995 15-04-1993 24-06-1993 25-10-1989 09-11-1990 05-06-1996 26-05-1992 06-05-1993 16-05-1991 20-04-1991 30-05-1996 17-10-1996 02-10-1991 02-05-1991

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 00/01086

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5216183 A		JP 2621122 B	18-06-1997
		US 5338844 A	16-08-1994
JP 62000044 A	06-01-1987	NONE	
WO 9748389 A	24-12-1997	IT RM960430 A	18-12-1997
		AU 3340697 A	07-01-1998
		CA 2258675 A	24-12-1997
		EP 0939625 A	08-09-1999
WO 9825593 A	18-06-1998	IT RM960867 A	15-06-1998
		AU 5855798 A	03-07-1998
		EP 0951281 A	27-10-1999
EP 0701988 A	20-03-1996	CA 2158222 A	17-03-1996
		JP 8099913 A	16-04-1996
		US 5684205 A	04-11-1997
JP 09169780 A	30-06-1997	JP 2709807 B	04-02-1998
EP 0106576 A	25-04-1984	JP 1579381 C	13-09-1990
		JP 2004215 B	26-01-1990
		JP 59148734 A	25-08-1984
		JP 1040020 B	24-08-1989
		JP 1556818 C	23-04-1990
		JP 59164747 A	17-09-1984
		JP 1632799 C	26-12-1991
		JP 2058247 B	07-12-1990
		JP 59065015 A	13-04-1984
		JP 1590375 C	30-11-1990
		JP 2010154 B	06-03-1990
		JP 59065068 A	13-04-1984
		DE 3375914 D	14-04-1988
		US 4766147 A	23-08-1988
EP 0978277 A	09-02-2000	AU 6418698 A	22-10-1998
		CN 1251522 T	26-04-2000
		WO 9843623 A	08-10-1998
		AU 6418898 A	22-10-1998
		CN 1249680 T	05-04-2000
		EP 0978278 A	09-02-2000
		WO 9843624 A	08-10-1998
		AU 6117598 A	22-09-1998
		CN 1248243 T	22-03-2000
		EP 0984001 A	08-03-2000
		WO 9839291 A	11-09-1998
EP 0978278 A	09-02-2000	AU 6418898 A	22-10-1998
		CN 1249680 T	05-04-2000
		WO 9843624 A	08-10-1998
		AU 6418698 A	22-10-1998
		CN 1251522 T	26-04-2000
		EP 0978277 A	09-02-2000
		WO 9843623 A	08-10-1998
		AU 6117598 A	22-09-1998
		CN 1248243 T	22-03-2000
		EP 0984001 A	08-03-2000
		WO 9839291 A	11-09-1998

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 00/01086

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
EP 1008345	A	14-06-2000	AU	6418798 A	25-01-1999
			WO	9901119 A	14-01-1999

WO 9904777	A	04-02-1999	EP	1018336 A	12-07-2000
